WHAT IS CLAIMED IS

1. A device for determining a peak blood flow signal of a blood flow through at least a section of a selected coronary artery of a beating heart of a mammal, in particular a human being, wherein said device comprises a bioimpedance measuring device, which at least comprises
- at least two measuring electrodes,
- an impedance measuring device for measuring an impedance signal Z between a pair of said measuring electrodes, and
- processing means, which are able to determine a first time-derivative dZ/dt for said measured impedance signal Z, and to separate from said first time-derivative dZ/dt a peak signal PS that occurs first after the beginning of diastole of said heart during a heart beat,
and wherein said processing means are able to determine a maximum value MAX of said peak signal PS.

2. A device according to claim 1, wherein said bioimpedance measuring device comprises a plurality of measuring electrodes.

3. A device according to claim 2, wherein said plurality of measuring electrodes is arranged in a mesh.

4. A device according to claim 3, wherein all neighbouring measuring electrodes are substantially equidistant.

5. Device according to claim 1, wherein the processing means are able to determine a peak blood flow signal PF for said peak signal PS, by dividing said maximum value MAX by the distance between those two of said at least two measuring electrodes between which the impedance signal Z was measured, when the device is being used.

6. A device according to claim 2, wherein said processing means further comprise scanning means, which are able to select two or more pairs of said plurality of measuring electrodes during said heart beat, the processing means for each of said pairs being able to determine said peak blood flow signal PF in that section of said selected coronary artery which is bounded by said pair of measuring electrodes selected by the scanning means.

7. A device according to claim 6, wherein said scanning means are able to select all pairs of neighbouring measuring electrodes during one heart beat.

8. A device according to claim 1, further comprising display means for representing said peak blood flow signal PF as a function of position along said at least one selected coronary artery.

9. A device according to claim 2, wherein said plurality of measuring electrodes can substantially cover said heart.

10. A method for determining a peak blood flow signal PF of a blood flow through at least a section of at least one selected coronary artery of a beating heart of a mammal, in particular a human being, comprising the steps of
- applying a bioimpedance measuring device at least comprising impedance measuring means and at least two mutually spaced measuring electrodes to the body of said mammal, wherein at least said section of said at least one selected coronary artery is bounded by a pair of measuring electrodes of said at least two measuring electrodes,
- measuring an impedance signal Z between said pair of measuring electrodes, by means of said bioimpedance measuring device, which signal Z depends on the blood flow through that section of said at least one selected coronary artery which is bounded by said pair of measuring electrodes,
- determining a first time-derivative dZ/dt of said impedance signal Z,
- separating from said first time-derivative dZ/dt a peak signal PS that occurs first after the beginning of diastole of said heart during a heart beat,
- determining for said peak signal PS a maximum value MAX of said peak signal PS.

11. A method according to claim 10, wherein a plurality of impedance signals Z are determined along a plurality of locations along said at least one coronary artery, wherein for each of said impedance signals Z a first time-derivative dZ/dt is determined, a peak signal PS is separated therefrom, and a maximum value MAX is determined from said peak signal PS.

12. A method according to claim 10, wherein a peak blood flow signal PF is determined for said peak signal PS by dividing said maximum value MAX of said peak signal PS by the distance between those electrodes between which said peak signal PS was determined.

13. A method according to claim 10, wherein a plurality of measuring electrodes is applied to said body.

14. A method according to claim 13, further comprising the use of scanning means which are able to select at least two pairs of measuring electrodes from said plurality of measuring electrodes.

15. A method according to claim 12, further comprising the step of representing said peak blood flow signal PF as a function of position along said at least one selected coronary artery.

16. A method according to claim 15, further comprising the step of graphically highlighting those sections along said at least one selected coronary artery in which an increase in said peak blood flow signal PF is followed by a decrease in said peak blood flow signal PF, as seen in the direction of said blood flow.

17. A method according to claim 16, wherein said graphically highlighted parts are indicated on a model of a surface vasculature of said heart.

18. A method according to claim 10, wherein substantially all major surface coronary arteries of said heart are selected.

19. A method according to claim 13, wherein said plurality of measuring electrodes covers said heart substantially completely.